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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/724,484	11/28/2003	Jun-Ku Han	45545.18.0	1033

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John F. Dolan  
Fredrikson & Byron, P.A.  
4000 Pillsbury Center  
200 South Sixth Street  
Minneapolis, MN 55402-1425

EXAMINER

EASTHOM, KARL D

ART UNIT	PAPER NUMBER
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2832

DATE MAILED: 12/10/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

Application No.

10/724,484

Applicant(s)

HAN ET AL.

Examiner

Karl D Easthom

Art Unit

2832

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 10 January 2004.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1 and 3-11 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1 and 3-11 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
- 1) ☒ Certified copies of the priority documents have been received.
  - 2) ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - 3) ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_.
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_.

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2. Claims 1-2 and 4-11 are rejected under 35 U.S.C. 102(b) as being anticipated by Chan et al. (5852397) or Zhang et al. (5831510). Chan discloses the claimed invention at Fig. 9, with resistance element 17, first and second conductive layers 15, first and second electrodes 13. In claim 2, the current path is as claimed. The electrodes and layers face each other the first conductive layer and the second electrode layer face in opposite directions, and face does not require the elements to overlap and be directly opposite. As an alternative, the large portion of 13 at Fig. 9 of Chan et al. can be the second electrode. It is directly opposite and faces 49, the little portion of 15 or the first conductive layer. Then, note that either of first and second connectors 31 or 51 is “for electrically connecting the first conductive layer to the first electrode” where the first electrode is the little portion of 13, or 35. This is because the whole device is electrically connected to the rest of the device. This interpretation meets claim 8 also. For claim 4, the gap is depicted as smaller. For claim 5, the polymer is PTC. For claims 6-7, copper for the layers is disclosed at col.13, lines 55-60. For claims 8-9, the through holes 31A for example at Fig. 11 are at the sides, or see Figs. 9-10. For claim 10, the gap is rectangular. For claim 11, the electrodes are as claimed. Zhang discloses the claimed invention at Fig. 11, with resistance element 17, first and second conductive layers 15, first and second electrodes 13. In claim 2, the current path is as claimed. Similar remarks apply to the other claims, with

copper at col. 8, lines 35-40 for claims 6-7. For claims 8-9, see through holes 67 at the side.

Similar remarks apply to the alternative.

3. Claims 1-2, 4, 8, and 10-11 are rejected under 35 U.S.C. 102(b) as being anticipated by Inoue et al. (6,172,592). Inoue et al. discloses the claimed invention at Fig. 2A, with resistance element 2, first and second conductive layers 3, 4, face first and second electrodes 7, 6, respectively. The electrodes and layers face each other where the term does not require the first electrode and second conductive layer to be opposite each other. Or similar to the alternative noted above, first and second conductive layers 3, 4 face first and second electrodes 6, 7, with the connectors 6, 7 the side portions for electrically connecting the claimed portions since the whole device is electrically connected to all parts thereof. In claim 2, the current path is as claimed. For claim 4, the gap is depicted as smaller. For claim 8, the connection is at the sides via 7a. For claims 10-11, the gap is zigzag or waved with the gap as claimed.

4. Applicant's arguments filed 11/4/2004 have been fully considered but they are not persuasive. Applicant argues that in Chang Fig. 9 the little portion 49 of 15, the first conductive layer, does not face the little portion of 13, the second electrode. This is not correct where face does not necessarily mean that the elements are located directly opposite from each other with overlapping portions. That is, two cars can face each other on opposite sides of the road. As an alternative, the large portion of 13 at Fig. 9 of Chan et al. can be the second electrode. It is directly opposite and faces the portion 49, the first conductive layer. Then, note that either of connectors 31 or 51 is "for electrically connecting the first conductive layer to the first electrode" where the first electrode is the little portion of 13, or 35. This is because the whole

Art Unit: 2832

device is electrically connected. This meets claims 8-9 also. Similar remarks apply to Zhang and Inoue.

5. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

6. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Karl D Easthom whose telephone number is (571) 272-1989. The examiner can normally be reached on M-Th, 5:30AM-4:00PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Elvin Enad can be reached on (571) 272-1990. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Art Unit: 2832

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Karl D Easthom  
Primary Examiner  
Art Unit 2832

KDE